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ABSTRACT

This paper proposes a definition of intellectual character in which metacognition plays a key enabling role. Two necessary, if not sufficient, conditions for being said to have intellectual character are having high intellectual standards and habitually checking one's thinking against those standards, or being metacognitive. Four questions suggested by this definition are explored, and the ways in which current studies of metacognition can help frame the questions are reviewed. The first question considers whether people with intellectual character have high standards and habitually monitor their thinking in terms of those standards. Research on the differences between novices and experts supports this argument. Another question is what it actually means to have high standards. It is suggested that this means not simply completing a goal or task, but also caring about truth, value, and quality. A third area of exploration is what kinds of standards there are, and this is linked to the final consideration of where the standards come from and how they are internalized. The existence of less-than-ideal standards in our schools makes these issues important and of concern to researchers. (Contains eight references.) (Author/SLD)

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Metacognition and Character

Paper presented at AERA
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This paper proposes a definition of intellectual character in which metacognition plays a key enabling role: "Two necessary if not sufficient conditions for being said to have intellectual character are 1) having high intellectual standards, and 2) habitually checking one's thinking against those standards, or being metacognitive." It explores four questions suggested by the definition, discusses how current studies of metacognition can help frame the questions, and identifies areas in which further research is needed.

What's the difference between someone who is intelligent and someone who has intellectual character? There may be a number of differences, but it seems to me that two necessary if not sufficient conditions for being said to have intellectual character are 1) having high intellectual standards, and 2) habitually checking one's thinking against those standards. By this definition then, I would say Richard Feynman exemplified intellectual (if not moral) character because of his disposition to seek out and investigate new problems in theoretical physics. He had a ceaseless curiosity and questioned everything. As a scientist he was always careful never to stray far from experimental evidence, and he loved it when the experimentalists threw a curve ball at the accepted theory, even if it was his. He saw this as an opportunity for new discovery, not a moment of defeat.

Someone who is intelligent but lacks intellectual character, in contrast, fails to uphold high standards. Gregor Mendel comes to mind as an example of a well-meaning scientist who exhibited a lack of intellectual character. His theory of genetic inheritance has been substantiated, but it appears that he fudged his original data. He compromised his intellectual standards to promote an idea that he felt in his heart was right (E. Buchovecky, personal communication, 3/95).

So intellectual character is composed in part of high standards such as truth and honesty. My definition of intellectual character includes an element of metacognition as well. Being metacognitive, or monitoring, evaluating and regulating one's own thought processes, is the kind of critical reflection that I referred to in the second part of my definition: In order to be said to have intellectual character, a person must not only have high intellectual standards, but must regularly measure his or her thinking against them. Because of the importance of this kind of critical reflection in determining the differences between intelligence and intellectual character, I propose metacognition as a crucial link between intellect and character.

Having identified this link between metacognition and intellectual character, I will now explore some of the interesting questions the link suggests. I will discuss how current studies of metacognition can help frame these questions, and reveal where more research needs to be done.

So what are the interesting questions about intellectual character? There are many of course, but here are a few that come to mind most quickly:

- Is it, in fact, true that people with intellectual character have high standards and habitually monitor their thinking in terms of those standards?
- What does it mean to "have high standards"?
- What kinds of standards are there?
- Where do intellectual standards come from and how are they internalized?
- Are standards scrutinized and refined over time by those who subscribe to them?
- Why would a character bother having intellectual standards? What's the point, the evolutionary advantage, if you will?

- Are there standards that have general relevance, that cross-cut cultural perspectives and contexts and, if so, what are they?
- Are there historical differences in intellectual standards?
- Are there gender differences?

I will focus on the first four questions:

1) Is it, in fact, true that people with intellectual character have high standards and habitually monitor their thinking in terms of those standards?

There is an age-old debate about whether or not good thinkers are by definition reflective. In fact, ticking through a list of people that you believe have intellectual character, you may come across more than one that have high standards but don't seem to be particularly reflective about it. They don't transparently compare their thoughts to clearly articulated standards, they just... *have* them. If this is the case—that one can have high standards without reflecting on one's thinking—then my definition of intellectual character is incorrect. I would argue, however, that this is not the case, that the person who meets high intellectual standards without appearing to be metacognitive has simply practiced the act of evaluating her thought processes to the point of automaticity. Somewhere, somehow, the evaluation is occuring.

Research on the differences between novices and experts supports this argument, as does common sense: In the case of the person-of-character-without-transparent-reflection, it is unlikely that her every thought meets her high intellectual standards. What does seem likely is that the crummy ones are rejected immediately and automatically. That being the case, metacognition can be seen as a key enabling aspect of intellectual character—the mechanism that, consciously or otherwise, enables a person to determine whether or not the products and processes of cognition are "good enough."

Let's take a closer look at some of that research and see what light it can shed on this question of whether or not people of intellectual character tend to have high standards and monitor their thinking in terms of them. Over the past fifteen years or so, research on metacognition has suggested the answer is yes, that good thinkers, be they adult experts in their field or children just learning to read and write, do tend to be reflective. Studies of novice and expert writers, for example, have led Flower and Hayes (1981) to conclude that the ability to direct and monitor one's own writing process is an important part of an experienced writer's repertoire and related to the powers of metacomprehension that children develop as they learn to write. Alan Schoenfeld (1987) has revealed similar differences in the self-regulation of thought processes between expert and novice mathematicians. In some of the best known studies of metacognition, Ann Brown and her colleagues (1978, 1980, 1987, 1988) found that one source of the differences between high- and low-achieving readers is the degree to which they

monitor and regulate their comprehension of text. Taken together, this research suggests that good thinkers and learners do regularly monitor and direct their thinking, so I can tentatively answer the question in the affirmative.

This answer is inadequate in two ways, however. First, the research on metacognition has focused on "good thinkers"—people who can read, write and solve problems successfully—but it's not at all clear that intellectual character and good thinking are the same thing. In fact, it may be possible to have intellectual character but not be a good thinker. That is, a person might have high standards and regularly check to see if her thinking is meeting them, only to find that it is not and hardly ever does. In this case, the person has intellectual character but is not a good, successful thinker. Thus, the relationship between intellectual character and good thinking is one area in need of further study.

The second problem with the answer that research on metacognition provides to the question about intellectual character has to do with standards. The research just cited suggests that good thinkers and learners do regularly monitor and direct their thinking, but the question also asks about high standards. The literature speaks less clearly on this issue. Although the good thinkers studied certainly have *goals* in mind when they check their thinking—goals like writing clearly or reading with comprehension or solving a problem correctly—it is not obvious that goals and high intellectual standards are the same thing. In order to fashion a more complete answer to this question, we need a better understanding of what it means to have high standards.

2) What does it mean to have high standards?

According to the dictionary, a standard is "something established by authority as a fixed rule or measure; a criterion, rule or model; a basis of comparison in measuring or judging quantity, value, etc." In the singular form then, a standard is an exemplar, something that embodies excellence, like a Wynton Marsalis solo or Emily Dickinson poem or Michael Jordan jump shot. In the plural form, however, the word takes on a rather different meaning. According to Grant Wiggins, "the term *standards* implies a passion for excellence and habitual attention to quality..." (1991, p. 18). He goes on to say:

> When we speak of persons or institutions with standards—especially when modified by the word *high*—we mean they live by a set of mature, coherent, and consistently applied values evident in all their actions.... Higher standards are... a more vigorous commitment to intellectual values upheld consistently and daily in the face of entropy, fatalism, and the occasional desire on everyone's part not to give a damn (p. 20).

Having high intellectual standards, then, can be taken to mean not simply meeting a goal or successfully completing a task, but consistently giving a damn about things like truth and value and quality. This "giving a damn" take on intellectual character is reminiscent of the triadic conception of thinking put forth by Perkins, Tishman and Jay (1993), in which good thinking dispositions depend on inclination as well as ability and sensitivity.

3) What kinds of standards are there?

If having high intellectual standards can be taken to mean giving a damn, the next question has to be "Giving a damn about what?" or what kinds of standards are there? As I noted earlier, research on metacognition shows that experts tend to critically reflect on their thinking, but it only touches on standards implicitly. For example, Schoenfeld notes that experienced mathematicians tend to ask themselves questions like, "How am I doing?" "Am I making reasonable progress?" and "Is this the best approach, or should I try something else?" Reading between the lines, we can discern implied standards such as *reasonableness* and mathematical *efficiency*.

It's not necessary to do too much reading between the lines to come up with a tentative list of intellectual standards, however. Our culture has both stereotypical and research-based conceptions of good thinking and moral character to draw from. In fact, Perkins, Tishman and Jay have proposed a list of seven key dispositions for good thinking which can contribute to our understanding of intellectual standards. These include the disposition to:

- be broad and adventurous
- wonder, find problems and investigate
- build explanations and understandings
- make plans and be strategic
- be intellectually careful
- seek and evaluate reasons
- be metacognitive

Taken as standards, these strike me as reasonable enough, but the distinction I pointed out earlier between good thinking and intellectual character leads me to wonder: are these qualities generalizable to intellectual standards, or are they somehow limited to good thinking? Here then is another area in need of further research. Data is needed on the actual standards that people of intellectual character hold themselves to.

4) Where do intellectual standards come from and how are they internalized?

My last question isn't terribly interesting at first blush. The answer seems obvious—intellectual standards originate from the cultural context within which one develops, and, to the best of our understanding, are internalized via the same Piagetian, Vygotskian and Freudian mechanisms that everything else is. It gets more interesting, however, when we consider the practical implications of the development of intellectual standards. Specifically, what should schools do, if anything, to cultivate high intellectual standards?

It is tempting to pontificate on the educational implications of the link between metacognition and intellectual character, to create a lengthy list of demands for educators, but that seems premature somehow. In the interest of intellectual carefulness, I propose that we refrain from making prescriptions for teachers until we have a better understanding of what we are asking them to do.

At least one thing is clear however: *de facto* standards already exist in our schools, irrespective of professed values (Wiggins, 1991). If we look at the grading policies, criteria and standards used to judge and thus reinforce student performance, we find that certain things "count" in school and other things don't. Too often, what counts (or at least what is counted) are things like spelling and neatness and obedience, while virtues such as diligence and truth and open-mindedness are either not counted, discounted or actively discouraged.

The existence of less-than-ideal standards in our schools lends a certain urgency to the need for further research and development around intellectual character in general and intellectual standards in particular. To summarize, I have identified the following questions most in need of answers:

1. What is the relationship between intellectual character and good thinking?
2. What are the standards that people of intellectual character hold themselves to and how do they go about doing it?
3. What intellectual standards should our schools promote and how should they go about doing that?

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